

AMENDMENTS TO THE CLAIMS

Cancel Claims 1-38, without prejudice. Please amend Claims 39 and 40 and add Claims 41-45, as follows:

1-38. (Cancelled)

39. (Currently Amended) A computer-implemented method for ~~[[for]]~~ structured multimedia content retrieval, said method comprising:

providing a document tree representing elements of a plurality of multimedia XML documents; and

~~utilizing~~ applying a query language based on logic formalism for content retrieval, said logic formalism including ~~atomic logic formulas, said atomic logic formulas being element predicates in a relational calculus~~ element predicates and path predicates for asserting logical truth statements about said plurality of multimedia XML documents represented in said document tree,

wherein the element predicates are atomic formulas expressed as $E(x_1, x_2, \dots, x_n, c, t, a)$, where E is an element predicate and each of $x_1, x_2, \dots, x_n, c, t, a$ is a constant or variable, the element predicate $E(x_1, x_2, \dots, x_n, c, t, a)$ is a logic assertion that element "t" at address "a" contains "c" with attributes x_1, x_2, \dots, x_n in said document tree, and

wherein the path predicates are expressed as $P(x_1, x_2, \dots, x_n, c_1, c_2, \dots, c_m, t_1, t_2, \dots, t_p, a_1, \dots, a_q, d_1, \dots, d_r)$ where $x_1, x_2, \dots, x_n, c_1, c_2, \dots, c_m, t_1, t_2, t_p, a_1, \dots, a_q, d_1, \dots, d_r$ are logic variables for representing element attributes, element contents, tag names, element addresses, and element datatype members, respectively; and

~~identifying given specifications of multimedia XML documents in MPEG-7 XML query specifications; and~~

~~applying said logic formalism for processing said given specifications for specifying spatial and temporal relationships pertaining to said plurality of multimedia XML documents to support ~~MPEG-7 XML~~ document retrieval and modification of said multimedia XML documents.~~

40. (Currently Amended) [[A]] The computer-implemented method as recited in claim 39, comprising:

generating a description from a video based on a scene change technique, said generating including the steps of:

(a) breaking down the video temporally into scenes or shots using scene change detection algorithms that can detect both abrupt as well as gradual changes;

(b) outlining user-identified objects of interest within said scenes;

(c) tracking said user-identified objects;

(d) creating a node point where a significant motion change wherein a linear mode is inadequate;

(e) providing the specification of said user-identified objects as any of temporal, audio, and visual datatypes; and

(f) providing a description of said user-defined objects as any of spatial, temporal and visual datatypes.

41. (New) The computer-implemented method of claim 40, further comprising providing said tracking said user-identified objects in a semi-automatic manner.

42. (New) The computer-implemented method of claim 40, further comprising providing said description of said user-defined objects by the use of abstract datatype techniques (ADT).

43. (New) The computer-implemented method of claim 40, further comprising providing said respective datatypes as composite datatypes constructed from more primitive datatypes.

44. (New) The computer-implemented method of claim 39, wherein spatial and temporal relationships are derived from said element datatypes.

45. (New) The computer-implemented method of claim 44, wherein said spatial and temporal relationships are further included in specifications of said multimedia XML documents as complex datatypes.